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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,902	12/26/2001	James M. Chwalek	81674MSS	4278

7590

04/06/2004

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EXAMINER

FEGGINS, KRISTAL J

ART UNIT PAPER NUMBER

2861

DATE MAILED: 04/06/2004

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 20030331

Application Number: 10/035,902
Filing Date: December 26, 2001
Appellant(s): CHWALEK ET AL.

Mark Bocchetti
For Appellant

EXAMINER'S ANSWER

MAILED

APR 06 2004

GROUP 2800

This is in response to the appeal brief filed 12/5/2003.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

No amendment after final has been filed.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1, 3-8 & 2 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-8 are rejected under 35 U.S.C. 102(e). This rejection is set forth in prior Office Action, Paper No./Paper mailed dated 9/25/2003, as follows:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1- 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Hawkins et al. (US 6,457,807 B1).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Hawkins et al. disclose the following claimed limitations:

- * regarding claim 1, an ink jet printer (Abstract)
- * a print head having an array of nozzles from which ink droplets of adjustable volume are emitted (col 5, lines 49-57, fig 1a);
- * a mechanism/ink drop forming mechanism, 22) adapted to individually/each/ adjust the volume of the emitted ink droplets (col 5, lines 49-57, fig 1a), said mechanism having a first state/non-selected drops/ wherein the emitted droplets of selected nozzles are of a predetermined small volume and a second state/selected drops/ wherein the emitted droplets of selected nozzles are of a predetermined large volume (col 6, lines 31-43;
- * a controller (col 5, lines 55-57, 24 of fig 1a) adapted to selectively switch the mechanism between its first /non-selected drops/and its second states/selected drops/ such that ink droplets of said predetermined large volume/selected drops/ are not simultaneously emitted from adjacent ones of said nozzles (col 5, lines 49-57, figs 1a and 1b). /Shown in figure 1a, the controller which controls the ink drop forming mechanism is shown and shown in figure 1b, the controller various drops size between small and large drops of the adjacent nozzles, such that when two small drops are ejected from one of the adjacent nozzle the other adjacent nozzle ejects a large drop/.
- * regarding claim 2, wherein the nozzle array is linear (col 4, lines 63-65, col 5, line 47-49, figs 1a & 2a)

* regarding claim 3, wherein said mechanism adapted to adjust the volume of the emitted ink droplets includes a heater/col 5, line 49-50, 22 of figs 1a & 1b/ positioned proximate said nozzle, said heater being adapted to selectively create said ink droplets having small volume/non-selected drops/ and said ink droplets having large volume/selected drops/ (col 5, lines 55-57, figs 1a, 1b, item 22)

* regarding claim 4, a print head having an array of nozzles from which streams/working fluid/ of ink are emitted, said ink streams/working fluid/ breaking up into droplets of adjustable volume moving along a path (col 47-57, figs 1a, 1b);

* a controller/24 of figs 1a/ adapted to selectively switch the mechanism between its first/non-selected drops/ and its second/selected drops/ states such that ink droplets of said predetermined large volume from adjacent ones of said nozzles do not simultaneously occur. /Shown in figure 1a, the controller which controls the ink drop forming mechanism is shown and shown in figure 1b, the controller various drops size between small and large drops of the adjacent nozzles, such that when a large drop is ejected the adjacent nozzle ejects two small drops/. (col 5, lines 49-57, figs 1a and 1b).

* regarding claim 5, a droplet deflector/32 of fig 1b/ which uses a flow of gas/30 of fig 1b/ positioned at an angle greater than zero with respect to said ink droplet path, said droplet deflector being adapted to interact with said ink droplets, thereby separating ink droplets of said predetermined small volume from ink droplets of said predetermined large volume (col 5, lines 57-col 6, line 4).

* regarding claim 6, wherein said droplet deflector includes a recovery plenum/gutter, 34 of fig 1b/ positioned adjacent said stream of ink droplets operable to collect and remove ink droplets. (col 5, lines 64-65, 34 of fig 1b)

* regarding claim 7, wherein said droplets are emitted substantially simultaneously from all the nozzles of the array (col 5, lines 47-49, 16 of figs 1a & 1b)

* regarding claim 8, a method of ink jet printing using a print head (18 of fig 1a & 1b) having an array of nozzles (figs 1a, 2a, 2c, 2d, col 4, lines 63-65) from which ink droplets of adjustable volume are emitted (col 5, lines 47-57, figs 1a & 1b, Title and Abstract);

* individually adjusting/selectively activated at various frequency/ the volume of the emitted ink droplets such that the emitted droplets of selected nozzles are of predetermined small volume/non-selected drops/ or of a predetermined large/selected drops/ volume (col 5, lines 47-57, figs 1a & 1b);

* controlling the size of the ink droplets such that ink droplets of said predetermined large volume are not simultaneously emitted from adjacent ones of said nozzles. /Shown in figure 1a, the controller which controls the ink drop forming mechanism is shown and shown in figure 1b, the controller various drops size between small and large drops of the adjacent nozzles, such that when a large drop is ejected the adjacent nozzle ejects two small drops/. (col 5, lines 49-57, figs 1a and 1b).

(11) Response to Argument


With respect to claims 1-8, the appellant argues that adjacent nozzles never eject large-volume drops at the same time, thus nozzles can be tightly packed while insuring that large volume drops are physically separated one from another. Appellant further argues that Hawkins et al. patent cannot disclose adjacent nozzles that never eject large-volume drops at the same time, because Hawkins et al. disclose nozzles that are physically staggered the nozzles in an in-track direction and therefore adjacent nozzles are able to eject large-volume drops at the same time due to the nozzle separation (see the bottom portion of page 2 of the Brief). The Appellant's argument is irrelevant because the claims do not preclude the reference from having these limitations. Hawkins et al. does disclose large-volume drops that are not simultaneously emitted from adjacent nozzles (see figs 1a and 1b). These nozzles are adjacent even though they are diagonal to each other (see fig 1a).

With respect to claim 2, appellant argues that the recitation of linear nozzle array is not taught by Hawkins et al. The examiner disagrees. Even though Hawkins discloses staggered nozzles in an in-track direction, the nozzle are still in a line, diagonal but linear. A diagonal line is linear. Therefore the diagonal arrays of nozzles are linear arrays. The appellant does not claim an orientation of a linear array. Therefore, given Hawkins array of nozzles, the diagonal nozzles forms linear arrays (see fig 1a).

Art Unit: 2861

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


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April 1, 2004

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